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Carl-Gustaf Carlin

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EXAMINER

THANGAVELU, KANDASAMY

ART UNIT

PAPER NUMBER

2123

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,905	Applicant(s) CARLIN ET AL.	
	Examiner KANDASAMY THANGAVELU	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 is/are allowed.
- 6) ☒ Claim(s) 2-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>January 6, 2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. Claims 1-9 of the application have been examined.

Foreign Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application 0301984-1 filed in Sweden on July 7, 2003 and the PCT application PCT/SE2004/001100 filed on July 6, 2004. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. Acknowledgment is made of the information disclosure statements filed on January 6, 2006 together with a list of patents and copies of papers. The patents and papers have been considered.

Claim Objections

4. The following is a quotation of 37 C.F.R § 1.75 (d)(1):

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The claim or claims must conform to the invention as set forth in the remainder of the specification and terms and phrases in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

5. Claims 2, 4, 5, 8, 9 are objected to because of the following informalities:

In claim 2, Line 3, “based on a method randomly choosing values” appears to be incorrect and it appears that it should be “based on a method of randomly choosing values”.

In claim 4, Lines 6-7, “said simulated pretension condition (Fp)” appears to be incorrect and it appears that it should be “said simulated pretension condition (Fs)”.

In claim 5, Lines 2-3, “resultant practically processed pretension conditions (Fp)” appears to be incorrect and it appears that it should be “said practically processed pretension conditions (Fp)”.

In claim 7, Lines 1-2, “resultant practically processed pretension conditions (Fp)” appears to be incorrect and it appears that it should be “said practically processed pretension conditions (Fp)”.

In claim 8, Lines 1-2, “resultant practically processed pretension conditions (Fp)” appears to be incorrect and it appears that it should be “said practically processed pretension conditions (Fp)”.

In claim 9, Lines 1-2, “resultant practically processed pretension conditions (Fp)” appears to be incorrect and it appears that it should be “said practically processed pretension conditions (Fp)”.

Appropriate corrections are required.

Duplicate Claims, Warning

6. Applicant is advised that should claim 3 be found allowable, claim 6 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 2- 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 2, Line 7, “the limits of said deviation range” has no antecedent basis.

In Claim 3, Line 2, “said simulation results” has no antecedent basis.

In Claim 3, Line 5, “the practically obtained parameter values” has no antecedent basis.

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In Claim 3, Lines 5-6, “the parameter values” has no antecedent basis.

In Claim 4, Lines 3-4, “the value of all resultant practically processed pretension” has no antecedent basis.

In Claim 4, Lines 5-6, “the limits of said deviation range” has no antecedent basis.

In claim 5, Lines 2-3, it is not understood how “resultant practically processed pretension conditions (Fp)” is different from “practically processed pretension conditions (Fp)”.

In Claim 5, Lines 3-4, “the limits of said deviation range” has no antecedent basis.

In Claim 5, Line 5, “the actual type” has no antecedent basis.

In Claim 6, Lines 1-2, “said simulation results” has no antecedent basis.

In Claim 6, Lines 4-5, “the practically obtained parameter values” has no antecedent basis.

In Claim 6, Line 5, “the parameter values” has no antecedent basis.

In claim 7, Lines 1-2, it is not understood how “resultant practically processed pretension conditions (Fp)” is different from “practically processed pretension conditions (Fp)”.

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In Claim 7, Line 3, "the limits of said deviation range" has no antecedent basis.

In Claim 7, Line 4, "the actual type" has no antecedent basis.

In claim 8, Lines 1-2, it is not understood how "resultant practically processed pretension conditions (Fp)" is different from "practically processed pretension conditions (Fp)".

In Claim 8, Line 3, "the limits of said deviation range" has no antecedent basis.

In Claim 8, Line 4, "the actual type" has no antecedent basis.

In claim 9, Lines 1-2, it is not understood how "resultant practically processed pretension conditions (Fp)" is different from "practically processed pretension conditions (Fp)".

In Claim 9, Line 3, "the limits of said deviation range" has no antecedent basis.

In Claim 9, Line 4, "the actual type" has no antecedent basis.

Status of Prior Art Review

9. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The closest prior art of record shows:

(1) a method for determining the applied torque in a screw joint, being tightened by a series of torque impulses; the rotational movement of the screw joint is detected during each

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impulse and the point at which the screw joint ceases to rotate is detected; the applied torque is indicated at the very moment the screw joint ceases to rotate; the per impulse increasing value of the applied torque is compared to a predetermined target value and the tightening process is interrupted when the target value is reached; for quality checking, the angular displacements achieved at repeated impulses are added and compared with the high and low limits of the total angle of rotation; the high and low limits of the final torque are also compared to the actual torque achieved; a torque impulse delivering power tool used in this method includes an impulse generator, a torque transducer and a rotation detection device and a process control device and a device to provide a torque target value; a comparing unit compares the actual values of the torque with the target value and shuts off power supply to the power tool when the target value is reached (**Schoeps**, U.S. Patent 6,341,533);

(2) a method for determining the optimum control parameter values for a screw joint tightening process carried out by a power wrench; the power wrench is controlled by a programmable control system utilizing the determined parameter values; the control system is provided with a screw joint tightening characteristic parameter values and operation parameter values characteristic of the actual power wrench used in the tightening process; the tightening process is mathematically simulated using the screw joint and power wrench characteristic parameter values and pre-chosen operation control parameter values; the results of simulated tightening process are evaluated using the predetermined criteria; thereby determining suitable operation control parameter values to be used during production tightening of the actual type of screw joint (**Hansson**, U.S. Patent 6,785,591); and

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(3) an instrument connected to a driving tool for driving elements in the form of an implant for dentine; the tool includes an electric motor, whose torque can be sensed and controlled by a control unit; a display unit is use to partly or fully display a curve representing the driving function performed; a tightening function is determined based on the slope of the curve; a flatter slope represents a lower quality function and a steeper slope represents a higher quality function; a frictional resistance that exists for an element during the driving of the element is determined to allow secure locking of the element by tension in the material of the element (**Dawood et al.**, U.S. Patent 6,547,565).

None of these references taken either alone or in combination with the prior art of record discloses a method for quality assurance of screw joint tightening of a screw joint to a needed pretension condition (FN) by means of a torque delivering power tool, specifically including:

(Claim 1) “performing at least one simulation procedure of a screw joint tightening process via a specific algorithm aiming at said needed pretension condition (FN) by using programmed data concerning the screw joint geometry, expected frictional conditions, operational characteristics of the power tool, a chosen tightening strategy, and adaptable values of at least one tightening parameter, thereby arriving at a simulated pretension condition (Fs) acceptably close to said needed pretension condition (FN),

performing in practice a screw joint tightening process by controlling the power tool in accordance with said chosen tightening strategy and aiming at said needed pretension condition (FN) by using said specific algorithm as well as programmed data concerning said screw joint geometry, said operational characteristics of the power tool, and tightening parameter values as

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derived from said simulation procedure, thereby arriving at a practically processed pretension condition (Fp),

comparing said practically processed pretension condition (Fp) with said simulated pretension condition (Fs), and

evaluating the outcome of said comparison for quality acceptance or refusal” in combination with the remaining elements and features of the claimed invention.

Allowable Subject Matter

10. Claim 1 is allowed.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez, can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC 2100 Group receptionist: 571-272-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kandasamy Thangavelu/
Art Unit 2123
April 27, 2009